

Amendments to the claims:

Claims 1-12 (Canceled)

Claim 13 (currently amended). A computer implemented method for creating or modifying a drawing or database for representing a physical environment, comprising the steps of:

- a) inputting into a computer one or more files, one or more raster images, one or more vector data, one or more vectors, one or more drawings, or one or more drawing objects which represent in a computer representation all or part of a physical environment in which an in-building or campus communications network may can be deployed, said computer representation providing representations of one or more of floors, walls, partitions, buildings, building complexes or compounds, terrain, foliage, or other sites or obstructions;
- b) using a computer for creating, formatting, and editing or manipulating, one or more objects in said computer representation;
- c) verifying, using a computer, the sufficiency of said one or more objects to ensure a useful three dimensional definition of said physical environment for use by a communications engineering or network management application, and notifying a user of results of said verification of sufficiency;
- d) generating at least one formatted drawing or database wherein said at least one formatted drawing or database, or said one or more objects, or one or more of electrical properties, physical properties, aesthetic properties, and spatial configurations of said one or more objects are transportable between users or between one or more communications engineering or network management applications; and
- e) rendering a three dimensional visual representation of said physical environment.

Claim 14 (previously presented). The method of claim 13 wherein said notifying performed in said verifying and notifying step is performed in an automatic fashion without feedback being provided to the user.

Claim 15 (previously presented). The method of claim 13 wherein said notifying performed in said verifying and notifying step is performed by prompting the user and, when required to provide said useful definition, requires the user to correct any insufficiencies in response to an insufficiency notification.

Claim 16 (previously presented). The method of claim 13 wherein said communications engineering or network management application is selected from the group consisting of one or more of wireless propagation prediction, measurement tools, component placement or layout visualization tools, optimization tools, bill of materials generating tools, and network performance management or prediction tools.

Claim 17 (previously presented). The method of claim 13 further comprising the step of adding or deleting at least one object in said at least one formatted drawing or database.

Claim 18 (previously presented). The method of claim 13 further comprising the step of editing or modifying at least one object in said at least one formatted drawing or database.

Claim 19 (previously presented). The method of claim 13 further comprising the step of moving at least one object in said at least one formatted drawing or database.

Claim 20 (previously presented). The method of claim 13 further comprising the step of removing extraneous items from any of said one or more files, one or more raster images, said one or more vector data, said one or more vectors, said one or more drawings, said one or more drawing objects, or said at least one formatted drawing or database.

Claim 21 (previously presented). The method of claim 13 further comprising the step of tracing and adding a traced object to said at least one formatted drawing or database.

Claim 22 (previously presented). The method of claim 21 wherein either or both of said steps of tracing and adding are performed before said verifying step.

Claim 23 (previously presented). The method of claim 13 further comprising modifying at least one object of said one or more objects, or at least one of electrical properties, physical properties, aesthetics properties, and spatial configurations of at least one object.

Claim 24 (previously presented). The method of claim 13 further comprising the step of editing or modifying any of said one or more files, one or more raster images, said one or more vector data, said one or more vectors, said one or more drawings, said one or more drawing objects, or said at least one formatted drawing or database.

Claim 25 (previously presented). The method of claim 13 further comprising the step of editing or modifying said at least one formatted drawing or database generated in said generating step.

Claim 26 (previously presented). The method of claim 13 further comprising the step of removing extraneous objects from said one or more objects.

Claim 27 (previously presented). The method of claim 13 further comprising the step of tracing and adding data representing a traced object.

Claim 28 (previously presented). The method of claim 13 further comprising the step of adding measurement data to said at least one formatted drawing or database.

Claim 29 (previously presented). The method of claim 13 wherein said verifying step produces a verified set of data, and further comprising the step of adding measurement data to said verified set of data.

Claim 30 (previously presented). The method of claim 13 further comprising the step of specifying or invoking a propagation model for performing predictions of performance.

Claim 31 (previously presented). The method of claim 13 further comprising the step of specifying or invoking a listing of communications equipment.

Claim 32 (previously presented). The method of claim 13 further comprising the steps of tracing and representing a traced object in a scaled database model of the physical environment.

Claim 33 (previously presented). The method of claim 13 wherein said at least one formatted drawing or database generated in said generating step is in a form transportable to and usable by one or more communications engineering or network management applications.

Claim 34 (previously presented). The method of claim 13 further comprising the step of prompting a user to enter information required to verify there is sufficient information to produce a verified set of data.

Claim 35 (previously presented). The method of claim 34 wherein said prompting is automatic or implicit.

Claim 36 (previously presented). The method of claim 13 wherein said verifying step produces a verified set of data and wherein said verified set of data, or said at least one formatted drawing or database, is transportable between users or between one or more engineering design or management applications.

Claim 37 (previously presented). The method of claim 13 further comprising the step of rendering a two dimensional view representative of said physical environment.

Claim 38 (withdrawn). An apparatus for creating or modifying a transportable database model of a physical environment for use with in-building communications network design, measurement, management, layout, asset management, or optimization applications, comprising:

computer implemented means for creating, formatting, editing, or manipulating one or more objects defining an environment in which a communications network may be deployed, said environment having one or more of floors, walls, partitions, buildings, building complexes or compounds, terrain, foliage, or other sites or obstructions;

means for generating at least one formatted drawing or formatted set of data which represents one or more objects, wherein said one or more objects or one or more of electrical properties, physical properties, aesthetic properties, or spatial configurations of one or more objects within said formatted drawing or formatted set of data can be transported between users or between one or more communications engineering or network management applications;

means for creating, formatting, editing, or manipulating one or more of said at least one formatted drawing or formatted set of data, or said one or more objects, or said properties or said configurations of said one or more objects; and

means for rendering a three dimensional view representing said environment.

Claim 39 (withdrawn). The apparatus of claim 38 further comprising means for rendering a two dimensional view representing said environment.

Claim 40 (withdrawn). The apparatus of claim 38 further comprising a means for verifying the sufficiency of said one or more objects to ensure a useful definition of said environment and notifying said user of results of a verification of sufficiency.

Claim 41 (withdrawn). The apparatus of claim 40 wherein notifying performed by said means for verifying and notifying is performed in an automatic fashion without feedback being provided to the user.

Claim 42 (withdrawn). The apparatus of claim 40 wherein notifying performed by said means for verifying and notifying is performed by prompting the user and, when required to provide said useful definition, requires the user to correct any insufficiencies in response to an insufficiency notification.

Claim 43 (withdrawn). The apparatus of claim 38 further comprising a means for adding measurement data to said at least one formatted drawing or formatted set of data or said one or more objects.

Claim 44 (withdrawn). The apparatus of claim 38 further comprising means for specifying or invoking a propagation model for performing predictions of performance.

Claim 45 (withdrawn). The apparatus of claim 38 further comprising a means for specifying or invoking a listing of communications equipment.

Claim 46 (withdrawn). A computerized system for creating or modifying a drawing or database for representing a physical environment, comprising:

means for inputting into a computer one or more files, one or more raster images, one or more vector data, one or more vectors, one or more drawings, or one or more drawing objects which represent in a computer representation all or part of a physical environment in which an in-building or campus communications network may be deployed, said computer representation providing representations of one or more of floors, walls, partitions, buildings, building complexes or compounds, terrain, foliage, or other sites or obstructions;

means for using a computer for creating, formatting, editing or manipulating one or more objects in said computer representation;

means for verifying, using a computer, the sufficiency of said one or more objects to ensure a useful three dimensional definition of said physical environment for use by a communications engineering or network management application, and notifying a user of results of said verification of sufficiency;

means for generating at least one formatted drawing or database wherein said at least one formatted drawing or database, or one or more objects or one or more of electrical properties, physical properties, aesthetic properties, or spatial configurations of said one or more objects are transportable between users or between one or more communications engineering or network management applications; and

means for rendering a three dimensional visual representation of said physical environment.

Claim 47 (withdrawn). The computerized system of claim 46 wherein said notifying performed by said means for verifying and notifying is performed in an automatic fashion without feedback being provided to the user.

Claim 48 (withdrawn). The computerized system of claim 46 wherein said notifying performed by said means for verifying and notifying is performed by prompting the user and, when required to provide said useful definition, requires the user to correct any insufficiencies in response to an insufficiency notification.

Claim 49 (withdrawn). The computerized system of claim 46 wherein said communications engineering or network management application is selected from the group consisting of one or more of wireless propagation prediction, measurement tools, component placement or layout visualization tools, optimization tools, bill of materials generating tools, and network performance management or prediction tools.

Claim 50 (withdrawn). The computerized system of claim 46 further comprising means for adding or deleting at least one object in said at least one formatted drawing or database.

Claim 51 (withdrawn). The computerized system of claim 46 further comprising means for editing or modifying at least one object in said at least one formatted drawing or database.

Claim 52 (withdrawn). The computerized system of claim 46 further comprising means for moving at least one object in said at least one formatted drawing or database.

Claim 53 (withdrawn). The computerized system of claim 46 further comprising means for removing extraneous items from any of said one or more files, one or more raster images, said one or more vector data, said one or more vectors, said one or more drawings, said one or more drawing objects, or said at least one formatted drawing or database.

Claim 54 (withdrawn). The computerized system of claim 46 further comprising means for tracing and adding a traced object to said at least one formatted drawing or database.

Claim 55 (withdrawn). The computerized system of claim 54 wherein said means of tracing and adding performs either or both tracing or adding before verifying with said means for verifying.

Claim 56 (withdrawn). The computerized system of claim 46 further comprising at least one of means for specifying or invoking a propagation model for performing predictions of performance, or means for specifying or invoking a listing of communications equipment.

Claim 57 (withdrawn). The computerized system of claim 46 further comprising means for modifying at least one object of said one or more objects, or at least one of electrical properties, physical properties, aesthetic properties, and spatial configurations of said at least one object.

Claim 58 (withdrawn). The computerized system of claim 46 further comprising means editing or modifying any of said one or more files, one or more raster images, said one or more vector data, said one or more vectors, said one or more drawings, said one or more drawing objects, or said at least one formatted drawing or database.

Claim 59 (withdrawn). The computerized system of claim 46 further comprising a means for editing or modifying said at least one formatted drawing or database generated by said means for generating.

Claim 60 (withdrawn). The computerized system of claim 46 further comprising means for removing extraneous objects from said one or more objects.

Claim 61 (withdrawn). The computerized system of claim 46 further comprising means for tracing and adding data representing a traced object.

Claim 62 (withdrawn). The computerized system of claim 46 wherein said means for verifying produces a verified set of data, and further comprising means for adding measurement data to said verified set of data, or said at least one formatted drawing or database.

Claim 63 (withdrawn). The computerized system of claim 46 further comprising means for tracing and representing a traced object in a scaled database model of the physical environment.

Claim 64 (withdrawn). The computerized system of claim 63 wherein said means for tracing and representing performs either or both tracing or representing before verifying with said means for verifying.

Claim 65 (withdrawn). The computerized system of claim 46 wherein said at least one formatted drawing or database generated by said means for generating is in a form transportable to and usable by one or more communications engineering or network management applications.

Claim 66 (withdrawn). The computerized system of claim 46 further comprising means for prompting a user to enter information required to verify there is sufficient information to produce a verified set of data.

Claim 67 (withdrawn). The computerized system of claim 66 wherein said prompting is automatic or implicit.

Claim 68 (withdrawn). The computerized system of claim 46 wherein said means for verifying produces a verified set of data and wherein said verified data, or said at least one formatted drawing or database is transportable between users or between one or more engineering design or management applications

Claim 69 (withdrawn). The computerized system of claim 46 further comprising means for rendering a two dimensional view representative of said physical environment.

Claim 70 (withdrawn). A computer implemented method for constructing a communications network database, comprising steps of:

using a computer for creating, formatting, editing or manipulating one or more objects used in a computer representation of an environment in which an in-building or campus communications network may be deployed, said environment having one or more of floors, walls, partitions, buildings, building complexes or compounds, terrain, foliage, or other sites or obstruction;

verifying, using a computer, the sufficiency of said one or more objects by performing any of the following:

- (i) removing unused and un-referenced objects from said one or more objects;
- (ii) removing unnecessary data selected from the group consisting of legends, initials, maps, map layers, text, and extraneous drawing objects;
- (iii) objects have been assigned attenuation factors;
- (iv) objects have been assigned colors;
- (v) objects have been assigned physical or electrical information
- (vi) intersection of objects with floors, ceilings, and other objects have been located;
- (vii) buildings are aligned with terrain;
- (viii) floors of a building are aligned with one another;

- (ix) determining if a database has been verified previously;
- (x) determining if database is newly created, altered, modified, amended, edited, previously formatted or not previously formatted;
- (xi) specifying at least one reference point;
- (xii) scaling one or more objects of said one or more objects;
- (xiii) scaling a raster image;
- (xiv) adding measurements at site specific locations;
- (xv) creating a legend for the drawing;
- (xvi) creating a boundary around drawing
- (xvii) specifying or invoking communications equipment listings;
- (xviii) specifying or invoking a propagation model for performing predictions or performance;
- (xix) specifying an air interface standard or operating frequency;

and

generating either

- (A) an editable database or one or more editable drawings wherein one or more of said objects or one or more of electrical properties, physical properties, aesthetic properties, and spatial configurations of one or more objects within said editable database or said one or more editable drawing can be altered, or
- (B) a set of formatted data or one or more formatted drawings on a form transportable to and useable by other users, or one or more communications engineering or network management applications; and rendering a three-dimensional view representing said environment.

Claim 71 (withdrawn). The method of claim 70 further comprising the step of grouping a number of said one or more objects.

Claim 72 (withdrawn). The method of claim 70 further comprising the step of adding measurement data to one or more of said one or more objects or one or more of said editable drawings, said editable database, said formatted data, or said formatted drawing.

Claim 73 (withdrawn). The method of claim 70 further comprising the step of notifying a user of the sufficiency of said one or more objects.

Claim 74 (withdrawn). The method of claim 73 wherein said step of notifying is preformed in an automatic fashion without feedback being provided to the user.

Claim 75 (withdrawn). The method of claim 73 wherein said step of notifying is preformed by prompting the user and, when required to provide said useful definition, requires the user to correct any insufficiencies in response to an insufficiency notification.

Claim 76 (withdrawn). The method of claim 70 further comprising the step of scaling one or more said editable database, said one or more editable drawings, said set of formatted data, or said one or more formatted drawings.

Claim 77 (withdrawn). The method of claim 70 wherein said generating step generates one or more of said editable database, said one or more editable drawings, said set of formatted data, or said one or more formatted drawings in a form transportable to and useable by a communications engineering or network management application

Claim 78 (withdrawn). The method of claim 77 wherein said communications engineering or network management application is selected from the group consisting of wireless propagation models, measurement tools, component placement or layout visualization tools, optimization tools, bill of materials generating tools, and network performance management or prediction tools.

Claim 79 (withdrawn). The method of claim 70 wherein step (i) is preformed during said verifying step.

Claim 80 (withdrawn). The method of claim 70 wherein step (ii) is preformed during said verifying step.

Claim 81 (withdrawn). The method of claim 70 wherein step (iii) is preformed during said verifying step.

Claim 82 (withdrawn). The method of claim 70 wherein step (iv) is preformed during said verifying step.

Claim 83 (withdrawn). The method of claim 70 wherein step (v) is preformed during said verifying step.

Claim 84 (withdrawn). The method of claim 70 wherein step (vi) is preformed during said verifying step.

Claim 85 (withdrawn). The method of claim 70 wherein step (vii) is preformed during said verifying step.

Claim 86 (withdrawn). The method of claim 70 wherein step (viii) is preformed during said verifying step.

Claim 87 (withdrawn). The method of claim 70 wherein step (ix) is preformed during said verifying step.

Claim 88 (withdrawn). The method of claim 70 wherein step (x) is preformed during said verifying step.

Claim 89 (withdrawn). The method of claim 70 wherein step (xi) is preformed during said verifying step.

Claim 90 (withdrawn). The method of claim 70 wherein step (xii) is preformed during said verifying step.

Claim 91 (withdrawn). The method of claim 70 wherein step (xiii) is preformed during said verifying step.

Claim 92 (withdrawn). The method of claim 70 wherein step (xiv) is preformed during said verifying step.

Claim 93 (withdrawn). The method of claim 70 wherein step (xv) is preformed during said verifying step.

Claim 94 (withdrawn). The method of claim 70 wherein step (xvi) is preformed during said verifying step.

Claim 95 (withdrawn). The method of claim 70 wherein step (xvii) is preformed during said verifying step.

Claim 96 (withdrawn). The method of claim 70 wherein step (xviii) is preformed during said verifying step.

Claim 97 (withdrawn). The method of claim 70 wherein step (xix) is preformed during said verifying step.

Claim 98 (withdrawn). The method of claim 70 further comprising the step of specifying or invoking a propagation model for performing predictions of performance.

Claim 99 (withdrawn). The method of claim 70 further comprising the step of specifying or invoking a listing of communications equipment.

Claim 100 (withdrawn). An apparatus for constructing a communications network database, comprising:

computer implemented means for creating, formatting, editing or manipulating one or more objects used in a computer representation of an environment in which an in-

building or campus communications network may be deployed, said environment having one or more of floors, walls, partitions, buildings, building complexes or compounds, terrain, foliage, or other sites or obstructions;

means for verifying, using a computer, the sufficiency of said one or more objects by performing any of the following:

- (i) removing unused and un-referenced objects from said one or more objects;
- (ii) removing unnecessary data selected from the group consisting of legends, initials, maps, map layers, text, and extraneous drawing objects;
- (iii) objects have been assigned attenuation factors;
- (iv) objects have been assigned colors;
- (v) objects have been assigned physical or electrical information
- (vi) intersection of objects with floors, ceilings, and other objects have been located;
- (vii) buildings are aligned with terrain;
- (viii) floors of a building are aligned with one another;
- (ix) determining if a database has been verified previously;
- (x) determining if database is newly created, altered, modified, amended, edited, previously formatted or not previously formatted;
- (xi) specifying at least one reference point;
- (xii) scaling one or more objects of said one or more objects;
- (xiii) scaling a raster image;
- (xiv) adding measurement at site specific locations;
- (xv) creating a legend for the drawing;
- (xvi) creating a boundary around drawing
- (xvii) specifying or invoking communications equipment listings;
- (xviii) specifying or invoking a propagation model for performing predictions or performance;
- (xix) specifying an air interface standard or operating frequency;

and

means for generating either

- (A) an editable database or one or more editable drawings wherein one or more of said objects or one or more of electrical properties, physical properties, aesthetic properties, and spatial configurations of one or more objects within said editable database or said one or more editable drawings can be altered, or
- (B) a set of formatted data or one or more formatted drawings in a form transportable to and useable by others or one or more communications engineering or network management applications; and means for rendering a three-dimensional view representing said environment.

Claim 101 (withdrawn). The apparatus of claim 100 further comprising means for grouping a number of said one or more objects.

Claim 102 (withdrawn). The apparatus of claim 100 further comprising means for adding measurement data to one or more of said one or more objects

Claim 103 (withdrawn). The apparatus of claim 100 further comprising means for notifying a user of the sufficiency of said one or more objects.

Claim 104 (withdrawn). The apparatus of claim 103 wherein said means for notifying functions in an automatic fashion without feedback being provided to the user.

Claim 105 (withdrawn). The apparatus of claim 103 wherein said means for notifying functions by prompting the user and, when required to provide said useful definition, requires the user to correct any insufficiencies in response to an insufficiency notification.

Claim 106 (withdrawn). The apparatus claim of 100 further comprising a means for scaling one or more of said editable database, said on or more editable drawings, said set of formatted data, or said one or more formatted drawings.

Claim 107 (withdrawn). The apparatus claim of 100 wherein said means for generating generates one or more of said editable database, said one or more editable drawings, said set of formatted data, or said one or more formatted drawings in a form transportable to and useable by communications engineering or network management application.

Claim 108 (withdrawn). The apparatus of claim 100 wherein said means for verifying performs function (i).

Claim 109 (withdrawn). The apparatus of claim 100 wherein said means for verifying performs function (ii).

Claim 110 (withdrawn). The apparatus of claim 100 wherein said means for verifying performs function (iii).

Claim 111 (withdrawn). The apparatus of claim 100 wherein said means for verifying performs function (iv).

Claim 112 (withdrawn). The apparatus of claim 100 wherein said means for verifying performs function (v).

Claim 113 (withdrawn). The apparatus of claim 100 wherein said means for verifying performs function (vi).

Claim 114 (withdrawn). The apparatus of claim 100 wherein said means for verifying performs function (vii).

Claim 115 (withdrawn). The apparatus of claim 100 wherein said means for verifying performs function (viii).

Claim 116 (withdrawn). The apparatus of claim 100 wherein said means for verifying performs function (ix).

Claim 117 (withdrawn). The apparatus of claim 100 wherein said means for verifying performs function (x).

Claim 118 (withdrawn). The apparatus of claim 100 wherein said means for verifying performs function (xi).

Claim 119 (withdrawn). The apparatus of claim 100 wherein said means for verifying performs function (xii).

Claim 120 (withdrawn). The apparatus of claim 100 wherein said means for verifying performs function (xiii).

Claim 121 (withdrawn). The apparatus of claim 100 wherein said means for verifying performs function (xiv).

Claim 122 (withdrawn). The apparatus of claim 100 wherein said means for verifying performs function (xv).

Claim 123 (withdrawn). The apparatus of claim 100 wherein said means for verifying performs function (xvi).

Claim 124 (withdrawn). The apparatus of claim 100 wherein said means for verifying performs function (xvii).

Claim 125 (withdrawn). The apparatus of claim 100 wherein said means for verifying performs function (xviii).

Claim 126 (withdrawn). The apparatus of claim 100 wherein said means for verifying performs function (xix).

Claim 127 (withdrawn). The apparatus claim of 100 further comprising means for adding measurement data to one or more of said editable database, said one or more editable drawings, said set of formatted data, or said one or more formatted drawings.

Claim 128 (withdrawn). The method of claim 100 further comprising means for scaling one or more of said editable database, said one or more editable drawings, said set of formatted data, or said one or more formatted drawings.

Claim 129 (withdrawn). The apparatus claim of 100 further comprising means for specifying or invoking a propagation model for performing predictions of performance.

Claim 130 (withdrawn). The apparatus of claim 100 further comprising a means for specifying or invoking a listing of communications equipment.

Claim 131 (withdrawn). The apparatus of claim 100 wherein said communications engineering or network management application is selected from the group consisting of wireless propagation models, measurement tools, component placement or layout visualization tools, optimization tools, bill of materials generating tools, and network performance management or prediction tools.